

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

CFAg | Central Chilterns

Baseline (SV-002-009)

Sound, noise and vibration

November 2013

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Department
for Transport

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High Speed Two (HS2) Limited,
Eland House,
Bressenden Place,
London SW1E 5DU

Details of how to obtain further copies are available from HS2 Ltd.

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

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1 Introduction

1.1 Structure of the sound, noise and vibration appendices

- 1.1.1 The sound, noise and vibration appendices comprise four sections. The first of these is an introduction to the relevant policy and methodology (Volume 5: Appendix SV-001-000). This relates to the sound, noise and vibration assessment for all community forum areas (CFA).
- 1.1.2 For the Central Chilterns area, the other three sections are as follows:
- baseline sound, noise and vibration (Volume 5: Appendix SV-002-009) (this appendix);
 - construction sound, noise and vibration (Volume 5: Appendix SV-003-009); and
 - operational sound, noise and vibration (Volume 5: Appendix SV-004-009).
- 1.1.3 Maps referred to within this appendix are contained in the Volume 5, Sound, Noise and Vibration Map Book.
- 1.1.4 This appendix includes details of the existing and future baseline sound environment within the area. It provides details of measurements and any other data collection which has been undertaken in order to obtain existing and future baseline sound levels.

1.2 Existing acoustic environment

- 1.2.1 The existing baseline sound environment for this area is varied. Generally the higher sound levels prevail in and around the larger settlements and near the main transportation infrastructure. Sound levels are typically lower in the smaller villages and at isolated properties.
- 1.2.2 In the north of the area there are a number of individual residential dwellings situated on Potter Row. In these locations daytime sound levels are typically approximately 45 - 50dB¹. Between here and South Heath natural sounds from wildlife and birds, agricultural sounds and distant road traffic are the main contributors to the soundscape. Aircraft over-flights are also occasionally audible. At the northern end of South Heath, where Frith Hill/Ballinger Road cuts through the village, the sound of road traffic is more prominent and daytime sound levels are typically approximately 50dB¹.
- 1.2.3 Situated at the southern end of South Heath is the ancient woodland known as Sibley's Coppice. Here, the soundscape is dominated by distant road traffic mixed with natural sounds including wind in the trees, birdsong and other wildlife. Daytime sound levels in this area are typically approximately 45 - 50dB¹.
- 1.2.4 In Hyde End, the dominant sound source is traffic on the B485 Chesham Road. Residential properties situated directly along the B485 Chesham Road are exposed to

¹ Quoted dB values at residential areas refer to the free-field 16 hour daytime (07:00 to 23:00) equivalent continuous sound pressure level, LpAeq,16hr.

higher sound levels than those situated in more isolated locations further from the road. Typical daytime sound levels at location close to the B485 Chesham Road are approximately 65dB¹. In locations further from the road daytime sound levels are typically approximately 45 - 50dB¹.

- 1.2.5 Mantle's Farm is situated on the south east side of the ancient woodland Mantle's Wood. The soundscape in this area is subjectively quiet; with occasional sounds from local traffic movements on the track serving the farm. Daytime sound levels in this location are typically approximately 50dB¹.
- 1.2.6 Around the proposed vent shaft south of Keepers Wood and north of Kennel Farm the soundscape is dominated by road traffic on the nearby busy A413 dual carriage way. Additionally trains on the close by Marylebone to Aylesbury Line are intermittently audible. During lulls in the road traffic on the A413 sounds such as rustling of trees and bird song, and occasional aircraft over flight can also be heard. In this location typical daytime sound levels are approximately 50 to 55dB¹.
- 1.2.7 Throughout the Central Chilterns area, night-time sound levels reduce appreciably compared to the daytime when road traffic flows on main and local roads and other activities significantly reduce. During this period sound levels decrease by up to approximately 10dB² when compared to daytime levels.

² Night-time sound levels refer to the free-field 8 hour night-time (23:00 to 07:00) equivalent continuous sound pressure level, LpAeq,8hr.

2 Scope, assumptions and limitations

2.1 Sound and vibration sensitive receptors

2.1.1 Within the Central Chilterns area, 89 assessment locations have been defined to represent all identified sound and vibration sensitive receptors within the spatial scope. The assessment locations are shown on the detailed maps in Map Series SV-03 and SV-04 (Volume 5, Sound, Noise and Vibration Map Book). Within this area, the following types of sound and vibration sensitive receptors have been identified:

- residential areas;
- education facilities;
- community centres and meeting facilities;
- places of worship; and,
- healthcare facilities.

2.2 Local engagement

2.2.1 Discussions have been held with representatives of Chiltern District Council regarding the approach which has been taken to baseline monitoring within this area, the identification of noise and vibration sensitive receptors, the selection of assessment locations, and baseline sound levels at these assessment locations.

2.2.2 Changes suggested during these meetings have influenced the assessment locations used and the monitoring undertaken and reported in this document.

2.2.3 Representatives of Chiltern District Council have also attended baseline sound measurements in this area and witnessed the measurement procedures used.

2.2.4 Local engagement through community forum meetings has also provided the opportunity for local groups to suggest appropriate baseline sound monitoring locations. Any suggestions received from these groups have been considered and influenced the monitoring undertaken and reported in this document.

2.3 Existing baseline sound monitoring locations

2.3.1 In some parts of this area, due to limited land access, baseline sound levels have been derived by means of extrapolation of noise levels measured in similar locations in the area.

2.3.2 Maps showing the baseline sound monitoring locations and assessment locations within this area are included in Map Series SV-03 and SV-04 (Volume 5, Sound, Noise and Vibration Map Book).

3 Environmental baseline

3.1 Existing baseline data collection methodology

- 3.1.1 The overall approach to baseline data collection for sound noise and vibration is described in Volume 5: Appendix SV-001-000.
- 3.1.2 Over the Central Chilterns area, a large number of baseline sound measurements have been undertaken. These have been classified as follows:
- long-term measurements – unattended measurements of several days duration;
 - medium-term measurements – attended measurements of several hours duration (generally repeated at different times of day); and
 - short-term measurements – attended measurements typically of 30 minutes duration (generally repeated at different times of day).
- 3.1.3 In this CFA a total of 52 baseline sound level measurements have been undertaken.
- 3.1.4 Towards the east of Little Missenden, two long-term measurements have been undertaken at noise sensitive properties that are in close proximity to the Proposed Scheme.
- 3.1.5 In Hyde Heath, two unattended measurements were undertaken at residential locations where baseline sound levels were representative of those at surrounding properties. These were supplemented by a single short-term measurement within the town.
- 3.1.6 Towards the western outskirts of Hyde Heath, a single long-term measurement was undertaken at a residential noise sensitive property.
- 3.1.7 In the area east of Wendover woods, three long-term measurements were undertaken at residential properties. The measurements from these locations are representative of the surrounding properties. These measurements are supplemented by a single short-term measurement at Hyde Lane.
- 3.1.8 In Hyde End, three long-term measurements were undertaken around Chesham Road. Baseline sound levels at these sites were representative of those at surrounding properties. These measurements were supplemented by two short-term measurements at two publically accessible locations along Chesham Road.
- 3.1.9 A single long-term measurement was made in Sibleys Coppice, at a noise sensitive receptor.
- 3.1.10 In South Heath, long-term measurements were undertaken at five locations towards the western area of the town. These long-term measurements were undertaken in areas where baseline sound levels were representative of those at surrounding properties. Four short-term measurements were also taken at various locations around the town. These long-term measurements were supplemented with four short-term measurements in the surrounding area.

- 3.1.11 Towards the western outskirts of South Heath, two long-term measurements were undertaken at properties where sound levels were representative of those at nearby noise sensitive receptors.
- 3.1.12 At Potter Row, approximately five hundred metres north of South Heath, three long-term measurements were undertaken at noise sensitive properties. Three additional short-term measurements were undertaken, one at each of the long-term locations (or as close as possible) to provide baseline sound levels for properties along this road.

3.2 Existing baseline sound levels

- 3.2.1 From the measurements described in Section 3.1, baseline sound levels have been ascertained for each assessment location within this area. These levels are presented in terms of the following key sound indicators:
- For the operational sound assessment
 - $L_{pAeq,16hr\text{ weekday}}$ daytime (07:00-23:00) sound pressure level;
 - $L_{pAeq,8hr\text{ weekday}}$ night-time (23:00-07:00) sound pressure level;
 - arithmetic average of $L_{pAFmax,5min}$ night-time sound pressure level; and
 - highest $L_{pAFmax,5min}$ night-time sound pressure level.
 - For the construction sound assessment
 - daytime L_{pAeq} sound pressure level (Monday to Friday 07:00-19:00; Saturday 07:00-13:00);
 - evening/weekend L_{pAeq} sound pressure level (Monday to Friday 19:00-23:00; Saturday 13:00-23:00; Sunday 07:00 to 23:00); and
 - night-time L_{pAeq} sound pressure level (Monday to Sunday 23:00-07:00).
- 3.2.2 These values are presented in Table 1. The data source coding included within this table details how the baseline sound levels allocated to each assessment location have been derived. This coding is summarised in Table 2 and explained in detail in Appendix SV-001-000.

Appendix SV-002-009

Table 1: Existing baseline sound levels

Assessment location ID	Area Represented	Measurement location	Existing baseline sound level (dB)							Data source coding
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ weekend L _{pAeq}	Night-time L _{pAeq}	
351444	Aylesbury Road, Great Missenden	CS1215	51.6	40.1	61.6	77.4	52.5	49.7	41.2	1,C,ii,b
351452	Aylesbury Road, Great Missenden	CS1215	61.8	50.3	61.6	77.4	62.7	59.9	51.4	1,A,ii,b
351515	Aylesbury Road, Great Missenden	CS8055	52.7	47.0	89.7	95.0	53.2	51.4	46.6	4,C,ii,b
353672	Church Street, Great Missenden	CS1215	61.8	50.3	61.6	77.4	62.7	59.9	51.4	1,A,iii,b
354579	Elmtree Green, Great Missenden	CS1215	52.7	41.2	61.6	77.4	53.6	50.8	42.3	1,C,ii,b
354872	Frith Hill, Great Missenden	CS0048	50.6	44.5	51.9	70.1	50.7	47.8	43.7	1,A,ii,b
355246	Aylesbury Road, Great Missenden	CS1215	61.8	50.3	61.6	77.4	62.7	59.9	51.4	1,A,i,a
355252	Aylesbury Road, Great Missenden	CS1215	51.1	39.6	61.6	77.4	52.0	49.2	40.7	1,C,ii,b
355317	Potter Row, Great Missenden	CS8051	45.9	42.9	67.6	97.6	45.9	41.5	41.1	3,D,ii,b
355352	Potter Row, Great Missenden	CS8051	45.9	39.2	67.6	97.6	45.9	39.2	39.2	3,D,ii,b
373949	Hyde Lane, Hyde End	CS0090	46.7	40.7	48.0	65.8	47.4	45.7	40.7	1,A,iii,b
374004	Hyde End, Great Missenden	CS0090	46.7	40.7	48.0	65.8	47.4	45.7	40.7	1,A,ii,b
374188	Ballinger Road, South Heath	CS5105	51.4	40.9	45.8	72.1	51.9	50.1	40.7	1,A,i,a
374262	Meadow Lane, South Heath	CS3015	46.5	39.8	47.2	62.9	46.2	44.6	39.0	1,A,ii,b
374330	Church Lane, Great Missenden	CS1215	61.8	50.3	61.6	77.4	62.7	59.9	51.4	1,A,ii,b
374450	Frith Hill, Great Missenden	CS0090	46.7	40.7	48.0	65.8	47.4	45.7	40.7	1,A,ii,b

Assessment location ID	Area Represented	Measurement location	Existing baseline sound level (dB)							Data source coding
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ weekend L _{pAeq}	Night-time L _{pAeq}	
374515	Frith Hill, Great Missenden	CS0048	50.6	44.5	51.9	70.1	50.7	47.8	43.7	1,A,iii,b
374531	Chesham Road, Great Missenden	CS8050	54.6	47.8	76.2	89.3	54.9	54.2	47.1	3,BC,ii,b
374552	Cudsdens Court, Great Missenden	CS8050	56.4	49.7	76.2	89.3	56.7	56.0	48.9	3,BC,ii,b
374611	Frith Hill, Great Missenden	CS0048	50.6	44.5	51.9	70.1	50.7	47.8	43.7	1,A,i,a
374641	Frith Hill, South Heath	CS0048	50.6	44.5	51.9	70.1	50.7	47.8	43.7	1,A,iii,b
374696	Frith Hill, South Heath	CS1204	47.4	40.9	50.0	67.4	48.2	50.4	40.8	1,A,i,a
374715	Frith Hill, South Heath	CS1204	56.8	50.3	50.0	67.4	57.6	59.8	50.2	1,C,ii,b
374719	Frith Hill, South Heath	CS2050	64.6	55.5	63.3	89.6	65.1	63.3	55.3	3,A,ii,b
374775	Sibleys Rise, South Heath	CS3015	46.5	39.8	47.2	62.9	46.2	44.6	39.0	1,A,ii,b
374806	Kings Lane, South Heath	CS0019	47.0	40.6	40.2	66.5	48.2	47.1	41.6	1,A,ii,b
374849	Bayleys Hatch, South Heath	CS2050	50.1	41.0	63.3	89.6	50.6	48.8	40.8	3,BC,ii,b
374914	Sibleys Rise, South Heath	CS3015	46.5	39.8	47.2	62.9	46.2	44.6	39.0	1,A,ii,b
375025	Kings Lane, South Heath	CS2026	47.7	41.0	48.9	64.5	47.4	45.8	40.2	3,A,ii,b
375067	Lappetts Lane, South Heath	CS2026	47.7	41.0	48.9	64.5	47.4	45.8	40.2	3,A,ii,b
375134	Kings Lane, South Heath	CS0019	47.0	40.6	40.2	66.5	48.2	47.1	41.6	1,A,ii,b
375214	Bayleys Hatch, South Heath	CS0057	47.6	43.5	44.0	69.2	48.7	38.9	43.5	1,A,i,a
375322	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	42.4	38.6	1,A,iii,b

Assessment location ID	Area Represented	Measurement location	Existing baseline sound level (dB)							Data source coding
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/weekend L _{pAeq}	Night-time L _{pAeq}	
375417	Potter Row, Great Missenden	CS2026	47.7	41.0	48.9	64.5	47.4	45.8	40.2	3,A,ii,b
375440	Potter Row, Great Missenden	CS2059	45.9	36.0	47.1	69.8	46.5	44.1	36.2	1,A,i,a
375451	Potter Row, Great Missenden	CS2059	45.9	36.0	47.1	69.8	46.5	44.1	36.2	1,A,ii,b
375485	Potter Row, Great Missenden	CS1009	50.0	44.9	50.5	72.1	50.6	48.3	44.5	3,A,ii,b
375495	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	46.5	38.6	1,A,ii,b
375508	Potter Row, Great Missenden	CS2059	45.9	36.0	47.1	69.8	46.5	44.1	36.2	1,A,ii,b
375545	Potter Row, Great Missenden	CS2059	45.9	36.0	47.1	69.8	46.5	44.1	36.2	1,A,ii,b
375619	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	42.4	38.6	1,A,ii,b
375630	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	42.4	38.6	1,A,ii,b
375648	Potter Row, Great Missenden	CS2059	45.9	36.0	47.1	69.8	46.5	44.1	36.2	1,A,ii,b
375669	Potter Row, Great Missenden	CS6015	50.7	50.4	50.0	80.1	50.8	49.3	48.9	1,A,ii,b
375754	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	42.4	38.6	1,A,ii,b
376239	Hyde Lane, Hyde End	CS1203	47.9	43.7	50.4	73.2	49.1	54.8	43.6	1,A,i,a
376310	Hyde Lane, Hyde End	CS1203	47.9	43.7	50.4	73.2	49.1	54.8	43.6	1,A,ii,b
376359	Hyde Lane, Hyde End	CS2061	45.7	35.4	41.2	57.5	46.1	45.3	35.2	1,A,ii,b
376368	Hyde Lane, Hyde End	CS2061	45.7	35.4	41.2	57.5	46.1	45.3	35.2	1,A,i,a
376399	Chesham Road, Hyde End	CS0090	46.7	40.7	48.0	65.8	47.4	45.7	40.7	1,A,i,a

Assessment location ID	Area Represented	Measurement location	Existing baseline sound level (dB)							Data source coding
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/weekend L _{pAeq}	Night-time L _{pAeq}	
376474	Chesham Road, Hyde End	CS2023	57.4	49.9	77.0	93.8	57.7	54.9	49.2	3,BC,ii,b
376478	Chesham Road, Hyde End	CS2023	53.8	46.3	77.0	93.8	54.1	51.3	45.6	3,BC,ii,b
376498	Chesham Road, Hyde End	CS2023	58.4	50.9	77.0	93.8	58.7	55.9	50.2	3,BC,ii,b
376517	Chesham Road, Hyde End	CS2023	54.8	47.3	77.0	93.8	55.1	52.3	46.6	3,BC,ii,b
376522	Chesham Road, Hyde End	CS0046	62.8	53.9	63.2	80.0	63.3	60.5	53.6	1,A,i,a
376647	Chesham Road, Hyde End	CS0046	57.9	49.0	63.2	80.0	58.4	55.6	48.7	1,C,ii,b
376658	Chesham Road, Hyde End	CS0046	62.8	53.9	63.2	80.0	63.3	60.5	53.6	1,A,ii,b
376681	Kings Lane, South Heath	CS6008	50.9	45.5	51.3	71.2	51.6	50.3	45.5	1,A,ii,b
376704	Kings Lane, South Heath	CS0019	47.0	40.6	40.2	66.5	48.2	47.1	41.6	1,A,i,a
376750	Kings Lane, South Heath	Cs2026	47.7	41.0	48.9	64.5	47.4	45.8	40.2	3,A,ii,b
377005	Wood Lane, South Heath	CS3015	46.5	39.8	47.2	62.9	46.2	44.6	39.0	1,A,ii,b
377084	Lappetts Lane, South Heath	CS3015	46.5	39.8	47.2	62.9	46.2	44.6	39.0	1,A,ii,b
377405	Wood Lane, South Heath	CS6008	45.9	40.5	51.3	71.2	46.6	45.3	40.5	1,B,ii,b
377718	Ballinger Road, South Heath	CS5105	51.4	40.9	45.8	72.1	51.9	50.1	40.7	1,A,ii,b
377770	Ballinger Road, South Heath	CS5105	51.4	40.9	45.8	72.1	51.9	50.1	40.7	1,A,ii,b
377793	Marriotts Avenue, South Heath	CS3015	45.9	39.2	47.2	62.9	45.9	39.6	39.0	1,D,ii,b
377835	Marriotts Avenue, South Heath	CS3015	45.9	39.2	47.2	62.9	45.9	39.6	39.0	1,D,ii,b

Assessment location ID	Area Represented	Measurement location	Existing baseline sound level (dB)							Data source coding
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/weekend L _{pAeq}	Night-time L _{pAeq}	
378065	Ballinger Road, South Heath	CS5105	51.4	40.9	45.8	72.1	51.9	50.1	40.7	1,A,ii,b
379212	Bullbaiters Lane, Hyde Heath	CS0105	45.9	39.2	47.1	72.8	45.9	41.9	39.2	1,D,iii,b
379334	Hyde Heath, Amersham	CS0105	47.6	42.2	47.1	72.8	48.4	47.0	41.8	1,A,ii,b
379370	Top Common, Hyde End	CS0090	46.7	40.7	48.0	65.8	47.4	45.7	40.7	1,A,ii,b
379436	Chesham Road, Hyde End	CS0055	49.3	42.9	50.1	70.3	50.2	48.4	42.4	1,A,i,a
379500	Browns Road, Hyde End	CS0055	49.3	42.9	50.1	70.3	50.2	48.4	42.4	1,A,ii,b
379633	Browns Road, Hyde End	CS0055	49.3	42.9	50.1	70.3	50.2	48.4	42.4	1,A,ii,b
379730	Brays Lane, Hyde Heath	CS8054	52.9	47.5	53.7	79.4	53.7	52.3	47.1	3,A,ii,b
380955	Chalk Lane, Hyde Heath	CS4011	49.0	40.7	49.9	62.9	49.5	47.8	40.8	1,A,ii,b
382171	Chalk Lane, Hyde Heath	CS4011	49.0	40.7	49.9	62.9	49.5	47.8	40.8	1,A,ii,b
382210	Chalk Lane, Hyde Heath	CS4011	49.0	40.7	49.9	62.9	49.5	47.8	40.8	1,A,ii,b
382291	Brays Close, Hyde Heath	CS1300	47.5	39.0	46.5	68.2	48.4	47.9	39.0	1,A,ii,b
382388	Chalk Lane, Hyde Heath	CS4011	49.0	40.7	49.9	62.9	49.5	47.8	40.8	1,A,ii,b
382636	Chalk Lane, Hyde Heath	CS1300	47.5	39.0	46.5	68.2	48.4	47.9	39.0	1,A,i,a
700359	Aylesbury Road, Great Missenden	CS8055	51.9	46.2	89.7	95.0	52.4	50.6	45.8	4,C,ii,b
700360	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	42.4	38.6	1,A,ii,b
700362	Potter Row, Great Missenden	CS2109	44.1	39.0	45.6	67.2	44.7	42.4	38.6	1,A,ii,b

Assessment location ID	Area Represented	Measurement location	Existing baseline sound level (dB)							Data source coding
			For operational sound assessment				For construction sound assessment			
			Daytime L _{pAeq,16hr}	Night-time L _{pAeq,8hr}	Arithmetic average of night-time L _{pAFmax,5min}	Highest night-time L _{pAFmax,5min}	Daytime L _{pAeq}	Evening/ weekend L _{pAeq}	Night-time L _{pAeq}	
700363	Hyde Lane, Hyde End	CS2061	45.7	35.4	41.2	57.5	46.1	45.3	35.2	1,A,ii,b
700364	Chalk Lane, Hyde Heath	CS4011	49.0	40.7	49.9	62.9	49.5	47.8	40.8	1,A,ii,b
700461	Little Missenden, Amersham	CS0089	54.1	47.7	57.9	71.7	54.5	54.2	47.4	1,A,ii,b
700490	Missenden Road, Amersham	CS0106	46.4	41.0	56.3	75.1	46.8	44.8	40.3	1,B,C,ii,b
720302	King's Lane, South Heath	CS6008	50.9	45.5	51.3	71.2	51.6	50.3	45.5	1,A,ii,b

Table 2: Data source coding key

Code	Data source type
1	Long-term measurement location
2	Short-term (linked to simultaneous long-term)
3	Short-term (using profile from non-simultaneous long-term)
4	Short-term using standard (National Noise Incidence Study ³ or other) 24hr profile
5	Specific validated prediction
6	Predictions from other sources (Department of Environment, Food and Rural Affairs (Defra) noise maps ⁴ , etc.)
7	Generic levels

Code	Corrections applied
A	Data from above source applied directly
B	Correction applied for screening
C	Correction applied for distance from source
D	Minimum level cut-off applied

Code	Distance from measurement
i	Data applied from a measurement at or very close to the assessment location.
ii	Data applied from a local measurement location at a greater distance but noted to have equivalent acoustic climate.
iii	Data applied from a distant measurement location where sound levels would be expected to be similar.

Code	Uncertainty
a	Data are considered highly representative of the prevailing sound climate.
b	Data are considered representative of the prevailing sound climate, but variations in measured levels indicate that there may be a higher degree of uncertainty than for (a).
c	Data are considered to be an estimate of the sound climate, (e.g. taken from Defra noise maps, etc.).

³ Building Research Establishment (2002), *National Noise Incidence Study*, 2000/2001.

⁴ Defra; Noise Mapping England; <http://services.defra.gov.uk/wps/portal/noise/>; Accessed: 26 July 2013.

3.3 Future baseline methodology

Construction

- 3.3.1 The assessment of noise from construction activities assumes a baseline year of 2017. As a conservative assumption, it has been assumed that no change in baseline sound levels will occur between the existing baseline (2012/13) and the future baseline year of 2017.
- 3.3.2 Due to the duration of the construction work and as the precise timing of the highest sound levels would be different in each location, using baseline sound levels for 2017 as the start of the construction period, provides a reasonable worst case assessment.
- 3.3.3 The assessment of construction traffic is based on future baseline traffic flows for 2021, as a year representative of the middle of the construction period.

Operation

- 3.3.4 There is potential for future baseline sound levels for operation (2026) to change when compared to the existing baseline sound levels (2012) as a result of changes in baseline sound sources.
- 3.3.5 In the vast majority of cases where change might occur it is expected that baseline sound levels will increase at assessment locations due to increases in vehicle movements on roads. It is therefore considered that the use of the 2012 baseline levels in the operational assessment will result in a worst case assessment of the impact of changes in the future baseline sound levels in the majority of locations.
- 3.3.6 Therefore for the purposes of this assessment future baseline levels have been assumed to be identical to those identified in Table 1 of this appendix for 2012.
- 3.3.7 In addition, based on available road traffic information a screening exercise has been undertaken to identify any areas in which a reduction in baseline sound level might be likely. Where reductions in baseline sound level have been identified a further screening assessment has been completed to identify if these changes would be likely to materially affect the operational sound assessment.
- 3.3.8 The screening assessment has not identified any locations in this area where a decrease in future baseline (2026), compared to existing baseline (2012), is likely to materially affect the operational sound assessment.

4 References

Building Research Establishment (2002), *National Noise Incidence Study*, 2000/2001.

Defra; Noise Mapping England; <http://services.defra.gov.uk/wps/portal/noise/>; Accessed: 26 July 2013.